



Investor Presentation

April 2018

Investment case: redT energy

- A **global market leader** in vanadium redox flow machines
- An energy storage expert, with 29 years experience in the energy industry
- Tier-1 manufacturing capability
- Over 3.4MWh of machines deployed globally with more than 1.8 million hours operating experience
- **Protective IP** over system design and technical knowledge
- Addressable market larger than all other battery markets combined
- Demonstrable commercial success in core markets with €2.5m (43 units) secured orders for 2018
- **€357m pipeline** (€18.3m / 330 units under final stage negotiation)

Key Existing Customers









What we do: redT energy

- Energy storage experts, specialising in durable, energy storage infrastructure which create attractive economic returns for customers
- Multi-technology energy storage solutions utilising patented redT flow machines or hybrid systems incorporating lithium
- 29 years energy industry experience with 18 years of energy storage product development combine to provide complete business solution for customers



redT 60kW, 300kWh machine



Sustainable equity value



Market Opportunity



Energy market trends



Cost of Solar Generation



Power Price Volatility



Grid Service Revenues

Tending to \$0/kWh

Peak Prices Rising

USA, UK + others coming online

Distributed infrastructure energy storage is now open for business This is real, distributed infrastructure – not opportunistic investments based on short term (< 1 hour) arbitrage



Energy storage applications overview

D	Market Size		
R iny, USA nd	\$65-103bn		
desired			
ing gures	>\$27bn		
d, Tidal form			
	\$32-50bn (US Market only)		
(>3hours) emental ot			
ar-term	redī		

energy storage



Grid Connected C&I – Renewables + Storage – ~15% IRI Certain geographies now economic; UK, Australia, Germa

Time-shifting for self consumption, contracted services and merchant revenues

Off-Grid & Weak Grid – ~30% IRR , 3-5 year payback

Diesel energy production cost \$0.50 to \$1 per kWh. Solar desired in off-grid, but doesn't work without industrial, heavy cycling storage. Solar + flow machine cost \$0.20-0.30 per kWh (figures indicative of South African market)

Renewables + Storage Grid Projects

Decentralised, large scale renewables projects (Solar, Wind, Tidal etc.) supported by large scale, flexible energy storage platform asset



Large Scale Grid Projects – Trading and Grid balancing (merchant returns- now economic)

For long duration grid services at national / regional level (>3hours) as base case, then can perform all grid services at no incremental cost, including energy trading. Policy to price services (not subsidies). Works now in Germany & USA, UK viable in near-term

redT market segment growth



redT channels to mass adoption

Direct Sales (C&I)	Distributors	Large Projects (Developers)	Specific Programmes
UK, Australia, Africa & EU	Local renewable or energy experts	Large-scale	Programmes Specific campaigns directed at
Establishes initial market credibility	Trusted and local to customers	infrastructure projects + tenders	exploiting new opportunities with
Develops customer use case	Initial 6-12 month onboarding process	Stages; Project design, technical review & project finance	grants, subsidies etc.
~ 12 month sales cycle	~6 month sales cycle for prequalified leads	~ 1-3 years sales cycle	E.g. RDPE grant in UK
	4 in UK, 2 in Africa plus E.Europe, S.E Asia, S.Pacific		
<i>Gen 3 Final Stage Selection</i>	<i>Gen 3 Final Stage Selection</i>	<i>Gen 3 Final Stage</i> <i>Selection</i> €2m (40 Units)	
€1m (20 Units, UK)	€7.8m (137 Units)	Financial close stage	

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energy storage

Unlocking on-grid energy storage

80%

Base Returns Locked In



Use **more** solar

Firming solar: 24/7 solar power Requires **4-8 hours** of storage

New Solar Grid-Connected

Batteries: 2 hours Flow Machines: > 4 hours



Merchant Revenue Upside



Contracted Grid Services (Fixed)

Access more revenues

Perform all services, remain flexible Batteries: 1 service (Freq. response) Flow Machines: All Services (stacked)



Save more on energy bills Renegotiate supply contracts Access wholesale power prices

UK C&I Min. 100kW Peak Demand

10

Renegotiate supply contracts Access wholesale power prices

Requires ~5 hours of storage to minimise price risk



Merchant Trading (Variable)

Profit from price volatility

System balancing: ~4 hours of storage

Batteries: 30 mins only Flow Machines: 30 mins – 4 hours +

redT machines = flexible platform

7-10 year Project Payback

Unlocking all PV, PPA, Grid and Trading Revenues + additional non-quantifiable benefits



Comparing energy storage business models



High % of business case locked-in Flexibility to change over time



Returns at risk Non-flexible business case



Unlocking off-grid energy storage

100%

Base Returns Locked In



Use **More** Solar Firming solar: 24/7 solar power Requires **4-8 hours** of storage



Downsize Generators Reduce reliance on generators Save up to 90% on fuel costs





Non-Quantifiable Upside Gain **Energy Security**

+ Upside

Full independence from unreliable grid networks – gain business continuity

Reduce Carbon Emissions Increase sustainability and reduce environmental impact



Increase Efficiency Run gensets at optimised loads Increase fuel efficiency & output



Reduce Maintenance

Reduce strain on machinery **Improve** machine lifespan

3-5 year Project Payback



redT machines = energy infrastructure Creates significant OPEX savings & supports environmental sustainability



Why flow technology?



Stationary energy storage market



energy storage

It's a machine! Not a b*****!



Ideal for:

Frequency Response Tenders – Good return in short run, but not sustainable long term



Ideal for:

Multiple, stacked services – Financeable, Infrastructure Asset with good long term returns



Lithium vs flow machines

Cheap Power

Short Life

High Levelised Cost of Ownership

High Maintenance & % Degradation cost

0 to 50% depth of discharge

Low recycle rate & environmental waste issue

Thermal runaway fire risk up to 27C temp restricted

25 Years

> Low Maintenance No Degradation

Low Levelised Cost

of Ownership

Long Life, infrastructure

Cheap Energy



100% depth of discharge

Fully reusable & environmentally friendly



Safe, no fire risk



Machines



Batteries

Time-shifting solar generation



energy storage

Hybrid energy storage





Why redT?



Experts in energy storage solutions - project finance, software solution, engineering & asset management

Revenue-based infrastructure customer business models

Outsourced manufacturing – Gigawatt scale, Tier 1 global manufacturing capability

One of the lowest Cost Vanadium Energy Storage Machines available globally.



Production & deployment overview





Achievements & outlook

Recent Achievements

Proven UK commercial model - opened up lucrative UK market

1st Vanadium/Lithium hybrid system to be deployed in Australia

Flagship demonstration site installed in cooperation with Centrica

Key demonstration site commissioned in South Africa (+ multiplier sales in Botswana)

Next generation 3 product development – Increased performance, reduced size & costs

Near-Term Focus

Further Sales of Gen 2 product in key markets - UK, EU & Asia

Delivery of Gen 3 product Pre-orders - €11m final stage selection

Close "Mega" projects in-front of meter, large scale generation redT selected as energy storage partner for large scale UK Tidal generation project



Management & executive team

Management Team



Scott McGregor* Chief Executive Officer CEO since 2009, extensive experience within mining, finance and technology industries, redT CFO 2006-09



Dave Stewart* Chief Operating Officer Joined 2017 from Jabil inc. extensive experience within high growth tech companies (HP, Keysight)



Fraser Welham* Chief Finance Officer

Joined 2018 from Green Investment Bank. Previous Clevel experience with Element power, Shanks Group plc.



Jean-Louis Cols Technology Director Joined 2017 from Logan Energy, previously Group Engineering Director at Intelligent Energy



Adam Whitehead Head of Research Joined 2017 from competitor Gildemeister energy storage, where he held Head of Research position

Board of Directors



Dr. Jeff Kenna

Chairman of the Board of Directors Joined 2006. 30 years managing business in energy sector, policy advisor to EC, World Bank, UN and UK Government

Neil O'Brien

Non-Exec Director Joined 2016, previously CEO of Alkane Energy from 2008.

Jonathan Marren

Non-Exec Director Joined 2016, Advisor to company since 2006 with 16 years industry experience. redT CFO 2012-16.



Michael Farrow Non-Exec Director Joined 2006. Founder and director of Consortia Partnership Limited, Jersey.

* Also a member of the Board





Appendix



Financial highlights

H2 2017 Trading Update:

"Performance in the second half of the year for the business was as expected with full year trading anticipated to be in line with market expectations"

H1 2017 Results:

Financial results for the group in **H1 2017** were in line with overall management expectations

- **€13.2m** in available cash (FY 2016: €2.8m)
- Loans and borrowings **€Nil** (FY 2016: €Nil)
- EBITDA loss for the period **€3.2m** (H1 2016: loss €2.2m)







redT 15-75 Machine being prepared for shipping to Johannesburg, South Africa



Internal view of redT 15-75 machine performing a charge/discharge cycle





redT 15-75 solar mini-grid project at the Thaba Eco Hotel in South Africa





redT's flagship UK 1MWh site at The Olde House, a working farm and holiday retreat in North Cornwall





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